



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/648,167      | 08/26/2003  | Martin R. Prince     | 100.003.5           | 4456             |

7590 10/05/2005

Neil Steinberg  
Steinberg & Whitt, LLP  
Suite 1150  
2665 Marine Way  
Mountain View, CA 94043

EXAMINER

JUNG, WILLIAM C

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3737

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 27-56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of U.S. Patent No. 6,662,038 B2 (from here on referred to as '038). Although the conflicting claims are not identical, they are not patentably distinct from each other because the feature elements in claims 1-45 are substantially the same as in current application.

**Claims 27, 38, and 49:** '038 claims in claim 1 a method of imaging portion of the aorta of a patient using a magnetic resonance imaging system, the method comprising determining a arrival time of a test bolus in a region interest, correlating an administration of a magnetic resonance contrast agent with an acquisition of magnetic resonance image data using the arrival time of the test bolus, administering the magnetic resonance contrast agent to the patient and acquiring the magnetic resonance image data using a 3D pulse sequence wherein the image data is acquired while the concentration of the contrast agent in the portion of the aorta is greater than a concentration of the contrast agent in veins and background tissue adjacent to the portion of the

aorta. Furthermore, '038 claims in claim 5 and 7 where the correlating the acquisition of magnetic resonance image data is representative of the cent of k-space with administration of the magnetic resonance contrast agent and the area of interest may include artery. The independent claims 27, 38, and 49 in current application is not identical to claim 1 in '038, however, the invention claimed in 27, 38, and 49 are obvious combination of claims 1, 5, and 7.

Claims 28-37, 39-48, and 50-56 includes limitation of flip angles, TR and TE, breath hold, region or interest, etc., which are disclosed in claims 2-15, 17-32, and 33-45 in '038.

### ***Priority***

3. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. [1] as follows:

The claimed priority document US Patent Application 09/828,428, now US Patent Number 6,662,038 B2 was identified in transmittal for filing under 37 C.F.R. 1.53 (b) and acknowledged. The priority documents in oath and declaration includes 08/071,970 and 08/378,384 dating back to June 7, 1993 January 25, 1995 respectively. However, there are numerous intervening continuation application and continuation-in-part application without explanation of the continuity at the beginning of the specification. Therefore, the current application benefits only the date of filing of 08/828,428, which is April 1, 2001.

### ***Claim Objections***

4. Claim 34 is objected to because of the following informalities: Claim 34 depends on itself. For the purpose of examination, the Examiner will assume that the dependency was meant to be on claim 27 (independent claim). Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 27, 82, 30-43, 45-51, and 53-56 are rejected under 35 U.S.C. 102(e) as being anticipated by *Wang et al* (US 6,230,040 B1).

Wang et al anticipate all claimed features in claims 27, 28, 30-43, 45-51, and 53-56.

***Claims 27, 32-34, 36-43, 45, 47-50, and 53-56:*** Wang et al disclose a method of imaging portion of the aorta of a patient using a magnetic resonance imaging system, the method comprising determining a arrival time of a test bolus in a region interest, which may include artery, correlating an administration of a magnetic resonance contrast agent with an acquisition of magnetic resonance image data using the arrival time of the test bolus and the correlating the acquisition of magnetic resonance image data is representative of the cent of k-space with administration of the magnetic resonance contrast agent, administering the magnetic resonance contrast agent to the patient and acquiring the magnetic resonance image data using a 3D pulse sequence wherein the image data is acquired while the concentration of the contrast agent in the portion of the aorta is greater than a concentration of the contrast agent in veins and background tissue adjacent to the portion of the aorta (col. 3, lines 2-34; col. 7, lines 16-52).

**Claim 28:** Wang et al disclose that the magnetic resonance image acquisition described above includes using flip angle greater than 30° and less than or equal to 90° (col. 10, lines 30-35).

**Claims 30, 31, and 51:** Wang et al also disclose that the patient's respiration was suspended, i.e. breath-hold (col. 10, lines 50-54).

**Claims 35 and 46:** Wang et al further disclose that the image volume of the 3D pulse sequence includes at least one dimension, which is greater than 25 cm (col. 10, lines 5-13).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 29, 44, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Wang et al* as applied to claims 27, 38, 42, and 49 above, and further in view of *Wang et al* (US 5,827,187).

Wang et al (US 6,230,040 B1; from here on refer to as 040') substantially disclose all claimed features in claims 29, 44, and 52. However, 040' does not explicitly disclose the TR and TE limitation of 10 ms and 3 ms, respectively. The variation of TR and TE range is well known in magnetic resonance imaging pulse sequence as evident by Wang et al (US 5,827,187; from here on refer to as 187') where 187' discloses TE and TR range of 2.5 to 10 ms to image aorta. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the

Art Unit: 3737

invention was made to apply the teachings of 187' to the teachings of 040' to improve the magnetic resonance imaging pulse sequence.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung, Ph.D. whose telephone number is 571-272-4739. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*WJS*

September 27, 2005



**ALI IMAM  
PRIMARY EXAMINER**